ATTACHMENTA
Remarks

Claims 1-16 stand pending in the present application. By this Amendment, Applicants have amended claim 1 and added new claim 16. Applicants submit that the present application is in condition for allowance based on the discussion which follows.

Claims 1-12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Wojtczak et al U.S. Patents Nos. 6,383,410 and 6,280,651 (hereinafter "Wojtczak").

By this Amendment, claim 1 has been amended to more clearly recite the present etching solution. Specifically, claim 1 has been amended to exclude chelating agents disclosed in Wojtczak, namely oxalic acid, succinic acid, adipic acid, tartaric acid, citric acid and polycarboxylic acids from claimed organic acid. Thus, as amended, the claimed acids exclude chelating agents.

In sharp contrast to the currently claimed invention, Wojtczak clearly discloses that its etching solution must contain chelating agents in the form of iminodiacetic acid, malonic acid, oxalic acid, succinic acid, boric acid, catechol, malic acid and pentandione, as chelating agents. Conversely, in accordance with the present specification, page 6, lines 4-7, the present solvents include organic solvents having a heteroatom, organic acids and water. The organic solvent and water are not a chelating agent. Further, as to the organic acids, mono-carboxylic acids and sulfonic acids are not chelating agents.

Since the claimed invention, as amended, exclude chelating agents including oxalic acid, succinic acid, adipic acid, tartaric acid and citric acid from organic acids, the etching solution of the invention do not include any chelating agent. Since chelating

agent is an essential component in Wojtczak, and the etching solution of the present invention is free of chelating agents, the present etching solution is not obvious in view of Wojtczak.

Based on the foregoing discussion, Applicants respectfully request that the rejection of claims 1-12 under 35 U.S.C. § 103(a) as being obvious in view of Wojtczak be withdrawn.

Applicants gratefully appreciate the Examiner's indication of allowable subject matter of claim 13. By this Amendment, Applicants have rewritten claim 13 in independent form as claim 16. Accordingly, Applicants respectfully submit that claim 16 is allowable as indicated by the Examiner.

In view of the foregoing, Applicants respectfully submit that the present application is in condition for allowance.

END REMARKS

ATTACHMENT B
Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) An etching solution having a thermal oxide (THOX) film etch rate and boron phosphosilicate glass (BPSG) film etch rate at 25°C of 100Å/min or lower and a ratio of (BPSG etch rate) / (THOX etch rate) of 1.5 or lower,

wherein the solution comprises (i) at least one member selected from the group consisting of a fluoride salt and a hydrogenfluoride salt; and (ii) solvent being at least one member selected from organic solvents, organic acids and water, and

wherein said organic acids consist essentially of acetic acid, propionic acid, butyric acid, isobutyric acid, valeric acid, caproic acid, caprylic acid, monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monofluoroacetic acid, difluoroacetic acid, trifluoroacetic acid, a-chlorobutyric acid, β-chlorobutyric acid, γ-chlorobutyric acid, lactic acid, glycolic acid, pyruvic acid, glyoxalic acid, acrylic acid, and like monocarboxylic acids methanesulfonic acid and toluenesulfonic acid.

2. (Original) The etching solution according to claim 1 comprising at least one member selected from the group consisting of a fluoride salt and a bifluoride salt.

3. (Original) The etching solution according to claim 1, wherein a solvent of the etching solution has a relative dielectric constant of 35 or lower.

4. (Previously Presented) The etching solution according to claim 1 comprising at least one member selected from the group consisting of an organic acid and an organic solvent comprising molecules having a hetero atom.

5. (Previously Presented) The etching solution according to claim 1 comprising (i) ammonium hydrogen fluoride, (ii) water and (iii) at least one member selected from the group consisting of an organic acid and an organic solvent comprising molecules having a hetero atom, the water being contained in a concentration of 3% by weight or lower.

6. (Previously Presented) The etching solution according to claim 1 comprising ammonium hydrogen fluoride, water and isopropyl alcohol, the water being contained in a concentration of 3% by weight or lower.

7. (Previously Presented) The etching solution according to claim 1 comprising ammonium hydrogen fluoride, water and ethanol, the water being contained in a concentration of 3% by weight or lower.

8. (Previously Presented) The etching solution according to claim 1 comprising ammonium hydrogen fluoride, water and acetone, the water being contained in a concentration of 3% by weight or lower.

9. (Previously Presented) The etching solution according to claim 1 comprising (i) ammonium fluoride and (ii) at least one member selected from the group consisting of an organic acid and an organic solvent comprising molecules having a hetero atom.

10. (Previously Presented) The etching solution according to claim 1 comprising (i) ammonium fluoride, (ii) water and (iii) at least one member selected from the group consisting of an organic acid and an organic solvent comprising molecules having a hetero atom, the water being contained in a concentration of 10% by weight or lower.

11. (Original) The etching solution according to claim 1 comprising ammonium fluoride, water and ethanol, the water being contained in a concentration of 10% by weight or lower.

12. (Original) The etching solution according to claim 1 comprising ammonium fluoride, water and isopropyl alcohol, the water being contained in a concentration of 10% by weight or lower.

13. (Original) The etching solution according to claim 1 comprising ammonium fluoride, water and acetic acid, the water being contained in a concentration of 1.5% by weight or lower.

14. (Withdrawn) A method for producing an etched article by etching an article with the etching solution as defined in claim 1.

15. (Withdrawn) An etched article which is produced by the method of claim 14.

16. (New) An etching solution having a thermal oxide (THOX) film etch rate and boron phosphosilicate glass (BPSG) film etch rate at 25°C of 100Å/min or lower and a ratio of (BPSG etch rate) / (THOX etch rate) of 1.5 or lower, said etching solution comprising ammonium fluoride, water and acetic acid, the water being contained in a concentration of 1.5% by weight or lower.